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10/050,896	01/18/2002	Gabriel Colombier	02006CIP	5844

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Ira J. Schultz
DENNISON, SCHEINER & SCHULTZ
1745 Jefferson Davis Highway, Suite 612
Arlington, VA 22202

EXAMINER	
WONG, EDNA	

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 01/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,896	COLOMBIER ET AL.	
	Examiner	Art Unit	
	Edna Wong	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) *15-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 29-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Election/Restrictions

Applicant's election without traverse of Group **I**, claims **1-14 and 29-54**, in the Response to the Restriction Requirement dated November 18, 2003 is acknowledged.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims **15-28** are withdrawn from consideration as being directed to a non-elected invention.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in France on July 22, 1999. It is noted, however, that applicant has not filed a certified copy of the 99/09690 application as required by 35 U.S.C. 119(b).

Specification

I. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because:

(a) the abstract is more than 150 words; and

(b) the word "means" is used in lines 17, 20 and 22.

Correction is required. See MPEP § 608.01(b).

II. The disclosure is objected to because of the following informalities:

page 7, the word "fluborate" should be amended to the word -- fluoborate --.

page 9, line 19, the word "forwards" should be amended to the word -- forward --.

page 9, lines 20-21, reference character "14" has been used to designate both a mechanical contact means and a liquid (from page 8, line 20). It is unclear what reference character "14" designates. See also page 10, lines 13-14; page 11, line 4; page 12, lines 11-12 and lines 29-30; page 14, line 1; page 15, line 6 and lines 19-20; and page 16, line 25.

page 14, line 8, reference character "13" has been used to designate both an intermediate receptacle and a mechanical contact means (from page 14, line1). It is unclear what reference character "13" designates.

page 15, line 2, reference character "6" has been used to designate both the

conductor and the part (from page 13, lines 28-29). It is unclear what reference character "6" designates. See also page 15, lines 4-5 and line 16; and page 16, lines 25-26.

page 15, lines 5, reference character "70" has been used to designate both the axle-wheel(s) assembly and the mechanical rolling contact means (from page 14, line 26). It is unclear what reference character "70" designates.

page 16, line 20, the word "forwards" should be amended to the word -- forward --.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims **2, 5 and 8** are objected to because of the following informalities:

Claim 2

line 2, the word "strongly" should be amended to the word -- strong --.

Claim 5

line 2, the word "strongly" should be amended to the word -- strong --.

Claim 8

line 2, the word "strongly" should be amended to the word -- strong --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

I. Claims **1-14 and 29-54** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the step(s) that makes the process continuous.

The preamble of claim 1 recites "A process for the continuous nickel plating of at least one aluminum conductor with a nickel coat". However, the body of the claim does not recite any continuous steps.

II. Claims **1-14 and 29-54** are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

line 3, it appears that "a nickel coat" is the same as that recited in claim 1, line 2. However, it is unclear if it is. If it is, then it is suggested that the word "a" be amended to the word -- said --.

line 10, it appears that "a mechanical electrical contact" is the same as that recited in claim 1, line 8. However, it is unclear if it is. If it is, then it is suggested that the word "a" be amended to the word -- said --.

line 11, "the conductor output" lacks antecedent basis.

Claim 10

line 2, the words ", possibly cooled, " are indefinite.

lines 2-3, the phrase "such as water or a neutral solution" is indefinite.

Claim 14

line 3, it appears that "an elementary wire or strand" is further limiting the at least one aluminum conductor recited in claim 1, lines 1-2. However, it is unclear if it is. If it

is not, then what is the relationship between the elementary wire or strand and the at least one aluminum conductor.

lines 7, it appears that "at least one nickel plated elementary wire or strand" is further limiting the nickel plating of said wire or strand using the process according to claim 1 recited in claim 14, lines 4-5. However, it is unclear if it is. If it is, then it is suggested that the words -- of said -- be inserted after the word "one".

Claim 30

lines 2-3, it is unclear which part contains the aluminum, the base part or the at least one clad alloy layer.

Claim 37

lines 2-3, it is unclear which part contains the aluminum, the base part or the at least one clad alloy layer.

Claim 42

lines 3-4, it appears that "a composite aluminum product comprising a base part and at least one clad alloy layer" is further limiting the at least one aluminum conductor recited in claim 1, lines 1-2. However, it is unclear if it is. If it isn't, then what is the relationship between the composite aluminum product comprising a base part and at

least one clad alloy layer and the at least one aluminum conductor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

I. Claims **1-13, 29 and 35-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Colombier et al.** (US Patent No. 5,015,340) in combination with **Hansson** (US Patent No. 3,867,265).

Colombier teaches a process for the continuous nickel plating of at least one aluminum conductor **7** with a nickel coat comprising the steps of:

(a) electrolytically pre-treating (P) **2** said conductor to improve the adherence of said nickel coat; and

(b) electrolytically plating nickel (N) **3** in which said nickel coat is deposited on said conductor by the action of a nickel plating current I_n (= 6A to 24 A) [col. 4, lines 56-58; cols. 5-6, Examples 1 and 2; and Figs. 1 and 2],

wherein said pre-treating step (P) makes the contact properties of said conductor sufficient to enable a mechanical electrical contact.

The pre-treating step (P) comprises an activation (A) in a strong acid bath (col. 3, lines 39-58) to enable fast dissolution of surface oxides.

The pre-treating step (P) comprises a pre-nickel plating step (PN) to coat the aluminum conductor with a primary nickel deposit (col. 3, lines 39-58) [The Examiner is equating the nickel plating of Colombier as a pre-nickel plating step].

The pre-treating step (P) comprises an activation (A) in a strong acid bath (col. 3, lines 39-58) to enable fast dissolution of surface oxides and a pre-nickel plating step (PN) in a pre-nickel plating bath (col. 3, lines 39-58) that coats the aluminum conductor with a primary nickel deposit, and wherein the pre-nickel plating step (PN) and the activation step (A) are done jointly and electrolytically with a liquid current connection (= all these compartments are connected to a common supply tank) [col. 5, lines 11-15].

The compositions of the activation bath and the pre-nickel plating bath are substantially the same (col. 3, lines 39-58).

The pre-treating step (P) comprises an activation (A) in a strong acid bath (col. 3, lines 39-58) to enable fast dissolution of surface oxides and a pre-nickel plating step (PN) (col. 3, lines 39-58) in which the aluminum conductor is coated with a primary nickel deposit, and wherein the pre-nickel plating step PN and the activation step A are done simultaneously in the same bath (col. 3, lines 39-58).

Several conductors **7** are treated simultaneously (= a layer of five wires) [col. 5, lines 32-39; and Figs. 1 and 2].

The aluminum conductor is an aluminum strip (col. 1, lines 10-15).

Colombier does not teach and wherein the nickel plating current I_n is transmitted to said conductor through a mechanical electrical contact on the part of the conductor output from the pre-treating step (P); and wherein said mechanical contact comprises at least one mechanical rolling contact means.

However, Hansson teaches a process for the continuous nickel plating of at least one aluminum conductor **9** with a nickel coat comprising transmitting the nickel plating current to said conductor through a mechanical electrical contact **15** (= driven rollers) on the part of the conductor output from the pre-treating step (P) **13** (col. 3, lines 3-37; and Fig. 1).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the process of Colombier with wherein the nickel plating current I_n is transmitted to said conductor through a mechanical electrical contact on the part of the conductor output from the pre-treating step (P); and wherein said

mechanical contact comprises at least one mechanical rolling contact means because Colombier is silent as to how he passes the wire continuously from one bath to the other. Thus, it is well within the skill of the artisan to have used driven rollers because the rollers contacting the wire would have provided the cathode for the electrodeposition of nickel onto the wire and would have served to guide the wire through the baths as taught by Hansson (col. 3, lines 3-37; and Fig. 1).

Furthermore, the selection of old parts to operate in new environments in order to achieve the same results was held to have been obvious. *In re Ross* 105 USPQ 237. And the substitution of known equivalent structures was held to have been obvious. *In re Ruff* 118 USPQ 343 (CCPA 1958).

As to wherein the equivalent average thickness of the said primary nickel deposit is less than about 0.1 μm, this is well within the skill of the artisan dependent upon the intended use of the conductor, particularly to the environment to which the conductor will encounter, which would be most suited for the application of the conductor, absent evidence to the contrary.

Hansson teaches a coating thickness of about 0.5 to 1.5 microns (col. 1, lines 61-64).

As to wherein the aluminum conductor is made of an alloy selected from the

group consisting of AA 1370, AA 1110 and AA 6101 according to the nomenclature of the Aluminum Association, Colombier teaches that the substrate includes aluminum and its alloy (col. 1, lines 9-15). It appears that an alloy selected from the group consisting of AA 1370, AA 1110 and AA 6101 would have been suitable in the process of Colombier, unless proven otherwise.

As to wherein the mechanical contact is immersed in a liquid, possibly cooled, such as water or a neutral solution, it is well within the skill of the artisan to have immersed the mechanical contact in water or a neutral solution because this would have cleaned the contact from contaminants.

As to wherein the nickel plating step is performed using a nickel plating bath containing a compound of a wetting agent, so as to deposit a nickel coat containing a wetting agent onto the aluminum conductor; and wherein the compound is selected from the group consisting of the acetates, citrates, sulfamates, fluoborates, lactates, oxides and mixtures thereof, Colombier teaches fluoborates in the nickel plating bath (= nickel fluoroborate and fluoroboric acid) [col. 3, lines 39-58].

II. Claims **30-34 and 37-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Colombier et al.** (US Patent No. 5,015,340) in combination with **Hansson** (US Patent No. 3,867,265) as applied to claims 1-13, 29 and 35-36 above, and further in view of **Edlund** (US Patent No. 4,126,522).

Colombier and Hansson are as applied above and incorporated herein.

Colombier does not teach wherein said aluminum conductor is a composite aluminum product comprising a base part and at least one clad alloy layer.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the process of Colombier with wherein said aluminum conductor is a composite aluminum product comprising a base part and at least one clad alloy layer because a base part made of plastic, for example, would have been lighter and cheaper to use and as long as the surface comprises aluminum, the surface being electroplated would have still been the same, i.e., nickel would have still been electroplated onto an aluminum surface.

As to wherein the clad alloy layer comprises a wetting agent; and wherein the

wetting agent is selected from the group consisting of lead, bismuth, lithium, antimony, tin, silver, thallium and any mixture thereof; wherein the clad alloy layer comprises between 0.01 and 1 wt. % of wetting agent, it appears that the aluminum alloys of the AA series would have comprised an amount of lead, bismuth, lithium, antimony, tin, silver, thallium or any mixture thereof. The aluminum alloy of the AA series are used for different products such as for automobile parts or for beverage cans. Thus, it is well within the skill of the artisan to have selected the type of aluminum alloy that would have been suitable for the wires as the aluminum alloys have different properties in different environments.

As to wherein the clad alloy layer comprises an aluminum-silicon alloy, Edlund teaches that silicon exists in aluminum as an alloying constituent in some cases or as an impurity in other cases (col. 2, lines 3-6).

III. Claims **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Colombier et al.** (US Patent No. 5,015,340) in combination with **Hansson** (US Patent No. 3,867,265) as applied to claims 1-13, 29 and 35-36 above.

Colombier and Hansson are as applied above and incorporated herein.

Colombier also teaches a process for manufacturing an aluminum electrical cable comprising the steps of:

(a) providing an elementary wire or strand **7**;

(b) nickel plating **3** said wire or strand using the process according to claim 1; and

(c) making said cable using at least one nickel plated elementary wire or strand (= fine aluminum wires intended to be used as electrical conductors in the production of flexible cables) [col. 1, lines 21-25].

IV. Claims **42-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Colombier et al.** (US Patent No. 5,015,340) in combination with **Hansson** (US Patent No. 3,867,265) and **Edlund** (US Patent No. 4,126,522) as applied to claims 30-34 and 37-41 above.

Colombier, Hansson and Edlund are as applied above and incorporated herein.

Colombier does not teach wherein the assembled product is a heat exchanger.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because the result of the

process (i.e., assembled product) does not distinguish the process steps from the prior art.

As to brazing said composite product, Hansson (col. 4, lines 16-24) and Edlund (col. 4, lines 14-21) teaches that the nickel coated aluminum wire prepared by the process may be tin soldered in the same way as a copper wire. Even hot tinning may be carried out.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.

Edna Wong
Primary Examiner
Art Unit 1753

EW
December 27, 2003